X-Plain™
Echocardiogram
Reference Summary

An echocardiogram helps a doctor see images of the heart. These images can help the doctor find out whether the heart has normal structures and functions.
Your doctor may request that you have an echocardiogram, or echo.
This reference summary will explain why echocardiograms are needed and what you can expect during an echo.

The Heart

The heart is the most essential muscle in the body. Its main function is to pump blood to the lungs and to the rest of the body.
The heart has 2 sides: the left side and the right side.
Each side is divided into 2 chambers; the atrium and the ventricle.
The blood from the body comes through big veins into the right atrium of the heart.
From the right atrium, the blood is pumped to the right ventricle.
The blood then gets pumped to the pulmonary artery and into the lungs. In the lungs, the blood gets loaded with oxygen and carbon dioxide is released.
From the lungs, the blood goes to the left atrium, then to the left ventricle.
From the left ventricle it gets distributed to the rest of the body through the aorta, the biggest blood vessel in the body.
Valves separate each atrium from the ventricles and the ventricles from the pulmonary artery and aorta. These valves allow the blood to only go in one direction.
A smooth membrane, called the pericardium, also surrounds the heart. This allows the heart to beat smoothly.
Since the heart is living tissue, it needs blood like the rest of the body. The heart pumps blood to itself through many blood vessels that go directly to the heart muscle. These are known as coronary arteries.

Heart Diseases & Echo

The heart can be affected by a number of diseases. Heart disease is the #1 cause of death in the United States.
Some heart diseases cause the blood vessels of the heart to clog, which can lead to a heart attack. These are called coronary artery diseases.
Other heart diseases affect the valves of the heart. Heart valves can either narrow too much or become leaky. If they narrow, it becomes difficult for the blood to go through; if they become leaky, blood could flow backward, decreasing the effectiveness of the heart.
Some heart diseases affect the muscle of the heart and make it weak.
Infections can involve the valves as well as the heart itself.
Blood can clot inside the heart, increasing the risk of having a stroke.
The pericardium, or heart covering, can get infected or fill up with fluid.
Your doctor can learn a lot about your heart by listening to its beat and by measuring the pulse and blood pressure.
An EKG, which is a heart tracing, can also be very helpful. However, an echo test allows the doctor to get an image of the heart without inserting anything inside the body.
With an echo test, your doctor can find out about:

- How the heart chambers and valves are working
- How the blood is flowing inside the heart
- Any inflammation of the heart membrane
- How strong the heart muscle is after a heart attack
- Any tumors on or in the heart.

How Echo Works

To create an image of the heart, sound waves bounce off of a device placed on the chest in the area that lies directly over the heart.
As the waves touch the heart, their echo bounces back to the device. The speed and intensity of the echo carries information about the heart tissue. This information is made into an image.
The technology used is similar to the ultrasounds test used to look at the baby of a pregnant woman.
Your doctor can read the images to learn about the muscles, valves, and other structures and functions of the heart.
You do not have to do anything special to prepare for an echo. It is helpful to wear comfortable clothing, with a shirt that is easy to unbutton or take off.
The echo produces animated pictures of the heart that show the heart contracting. It can also show blood flow inside the heart.

During An Echo

You will be asked to remove the clothing on your upper body and lie down on a special bed.
The technologist will attach electrodes to your chest, wrists, and ankles. These will be used to record an EKG at the same time that the echo is taken.
A special lubricant gel will be placed on the chest and on the transducer, the device that sends the waves.
A technician will move the transducer over the chest while slightly pushing on it.
The technician may ask you to adjust the way you sit or to breathe in a certain way. He or she will also ask you to sit very still during the test.
The echo is painless and involves no risk. Tell the technician if you feel uncomfortable or dizzy. It is best to just relax. If you are interested, you could ask your technologist for a peek at your own heart!
The whole test usually takes about 45 minutes. At the end, the technician removes the electrodes and helps you wipe any remaining lubricating gel from your chest.

After An Echo

The echo is an outpatient procedure, which means you will go home after the test. You can resume regular activities after an echo.
The technologist will send the results to a cardiologist, who will analyze them. A cardiologist is a doctor that specializes in heart diseases.
The cardiologist may discuss the results with you directly or send them to your family doctor. You could ask your doctor when the results will be ready.

Summary

An echocardiogram, or echo, can be very helpful in showing your doctor the structure and function of your heart.
The echo is a painless test and involves no risk.
Thanks to the echo, many diseases of the heart can now be seen without having to insert anything inside the body.